

## Vacuum-operated refuse systems cut manual handling and speed collection

While pneumatic trash collection systems have been available for more than 15 years in Europe, it's only in the past 18 months that they have been seriously considered in the U.S.

One vacuum-operated trash and garbage collection system developed by AB Centralsug, Stockholm, reports nine installations in operation in Europe and two in the U.S., including one at Walt Disney World, the \$400-million tourist attraction recently opened near Orlando, Fla. In addition, Centralsug claims 23 systems under construction and more than half of these in countries other than Sweden.

By the end of 1972, Centralsug, working through licensees, expects to have its system operating in France, England and West Germany. In Munich, 5,000 apartments built for the 1972 Olympics will be served by the system. In the U. S., a system is slated to service the 500 units of multifamily housing scheduled for the Operation Break-through site in Jersey City, N.J. The largest installation will be in a 7,500-apartment project now under construction in Caracas, Venezuela.

In Sweden, where materials and labor costs are exceptionally high, Centralsug requires 1,000 apartments with high-rise developments favored over low-rise projects. The system is not recommended for separate one or two-family dwellings.

In Sweden, a system serving up to 5,000 apartments costs about \$300,000, or 1 to 2% of total construction cost. Centralsug estimates that a building owner can recover his initial investment in four or five years, largely because the system eliminates almost all manual handling.

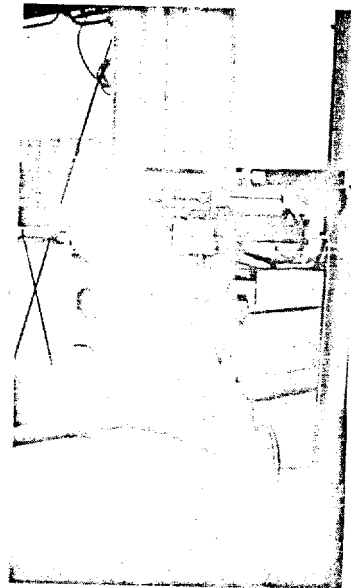
In the U.S., Centralsug's licensee, Envirogenics Co., a subsidiary of Aerojet-General Corp., El Monte, Calif., says its system (called AVAC) is economically feasible in buildings of as low as four stories providing they have a dense population such as a hospital. For installation in a less densely populated building, such as an apartment structure, Envirogenics recommends at least six stories.

Basically, the pneumatic trash removal system consists of a vertical, 20-in.-dia steel chute with a valve at its

base. When the pneumatically operated valve opens, the trash is sucked through subsurface or at-grade pipe to a central compactor using 8.67 psi. Compaction, usually in a 1:4 ratio, produces waste blocks. These must be collected for final disposal by incineration or landfill. The system can handle all household trash, but will not pick up uncontained liquids.

One of the longest pneumatic trash horizontal carries, 2.5 miles, is presently planned for a new-town project on Welfare Island in New York City's East River. This installation will be larger than the one at Walt Disney World, where 150 tons of garbage was handled during the first week, although the system can take up to 50 tons a day.

The pneumatic disposal system has caught the attention of hospitals in Sweden and the U.S. not only because it offers a more sanitary, faster way of



Discharge valve is pneumatic.

getting rid of garbage, but also because the system is available with a parallel pipe system that removes laundry. ENVIROGENICS CO., 9200 EAST FLAIR DR., EL MONTE, CALIF. 91734

## Train-held plow helps speed feeder cable laying

The Consolidated Edison Company of New York recently used a vibratory cable plow mounted on a railroad flat-car to plow in 2.3 miles of 33,000-volt feeder cables.

The plow was hydraulically powered by its own diesel prime mover. A second car carried the cable reels, set up so that a full one follows the empty one

with minimum delay. The train was pulled by a locomotive at speeds of 1 to 7 mph and a three-station telephone line kept the engineer, plow operator and reel tender in constant and immediate touch. Where soil conditions permitted and were known, the cable was planted directly on the first pass.

The two feeders, each consisting of three 2.3-in.-dia cables, were brought out from Con Ed's Arthur Kill-Fresh Kills substation along the freight railroad. The cables were buried at a depth of 5 ft with 2.5-in. separation.

When rock or heavy boulders were encountered, several runs were used to cut or dislodge the material. The machine was capable of ripping hard shale in 8-in. layers.

To rip, the machine uses the locomotive's tractive power transmitted through the car's backbone to the plow's beam and share (tooth). The share is held vertical by a hydraulic ram whose pressure can be set to a pre-calculated yield point. When this is exceeded, the tooth rises toward the horizontal, releasing the cable intact.

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